Washington State Department of Labor & Industries

Electrical Currents

Newsletter from the Office of the Chief Electrical Inspector

Stephen Thornton, Chief Electrical Inspector **Vol. 19 No. 10** **October 2015**

Question of the Month – You are designing a project for installation near the ocean and need to select an electrical enclosure that will provide a degree of protection against corrosion as well as being in a location that may be subject to prolonged submersion. What is the enclosure-type number required to be marked on an enclosure suitable for this application? – *See correct answer on page 2*

Safety Tip of the Month

Working in an attic space can be difficult and dangerous. It exposes you to fall hazards if you slip and step between the trusses. Employers must evaluate the hazards and take steps to reduce the risk of falls. Using appropriate fall protection measures reduces risks and saves lives. For more information, OSHA® has a helpful ***Fact Sheet*** about reducing falls while working in attics.

October Electrical Board Meeting to be Held in Spokane

This month's meeting of the Electrical Board will be held in Spokane. The board meets four times per year on the last Thursday of January, April, July, and October. The meetings are open to the public and meeting times and locations as well as minutes of previous meetings are posted on the ***Electrical Board*** page of our website. This month's meeting will be held October 29 at 9 a.m. at the Ramada at Spokane Airport, Inland Empire Room, 8909 West Airport Drive, Spokane.

Public Hearing on Proposed Rule Changes for Factory Assembled Structures (FAS)

Many electrical contractors and electricians perform work on Factory Assembled Structures (FAS). The Department of Labor & Industries will hold a public hearing to receive information and provide the opportunity for public comment regarding the proposed changes to the FAS rules. The hearing will be held Friday, October 30, 2015 at 9 a.m. in room S119 in the ***Tumwater L&I building***, 7273 Linderson Way SW, Tumwater. The purpose of this rulemaking is to propose amendments to sections of Chapter ***296-150M*** WAC for Manufactured Homes. For more information, you may visit the ***FAS Rule Development*** page of the ***FAS*** website.

Corrections Issued to Electrical Contractors Cause Costly Delays

Return trips to jobsites to complete corrections and verify completion are costly to you and to the department. When electrical inspectors encounter violations of the adopted installation standards, they issue a correction notice and may not be able to approve the installation for cover. This creates costly return trips for the contractor and the inspector, as well as unhappy owners and general contractors because of job delays. Electrical contractors and assigned electrical administrators should make your electrical workers aware of the following most common electrical corrections written to licensed electrical contractors last year to avoid having to deal with costly return trips.

- NEC® 110.3(B) Didn't follow the manufacturer's instructions. (Look for statements like "minimum supply circuit conductor temperature rating – 150°C" or "If fan is installed over a shower, GFCI protection is required".
- NEC® 210.8 Missing or inoperable GFCI protection or the GFCI is located in a non-readily accessible location.
- NEC® 408.4(A) Didn't fill out the panel schedule or update the existing one with new circuit information.
- NEC® 210.12 Didn't provide AFCI protection in required areas.
- NEC® 110.24(A) Didn't label the service equipment in other than dwelling units with the maximum available fault current including the date the fault-current calculation was performed.
- NEC® 110.12(A) Failing to seal unused openings in enclosures. (Really? This happened 662 times last year!)
- WAC 296-46B-250(2) Failing to install a concrete-encased electrode as required for new buildings or structures built on a permanent concrete foundation.

RCW 19.28.361 makes the installer – contractor and electrician – personally responsible and liable for any injury or damage to a person or property for any defect in the electrical installation. The RCW goes on to say that, the inspector is

not responsible for the safety of the installation. Inspectors cannot and will not inspect each termination, piece of wire, wire connector, or other device or equipment. The inspector is not on the job to create a "punch list" of items that need repairing. The inspector's job is to do a quick visual inspection to assure that the contractor and assigned administrator/master electrician has done the quality control work for their installations. The inspector is not expected to and will not be able to find every correction in an electrical installation. Inspectors and your customers expect to be able to inspect each installation without encountering significant safety problems – no corrections.

Of the 185,878 inspections made for electrical contractors last year, only 32,563 – 18% – had corrections written. Remarkably, only 20% of all electrical contractors caused 80% of all re-inspections. Because the contractor failed to be responsible for the quality of their electricians' work, corrections were issued which resulted in the need for a re-inspection. All contractors, administrators, and electricians should do their part in reducing the number of corrections the inspector encounters. Your reduction of corrections will save everyone time and money.

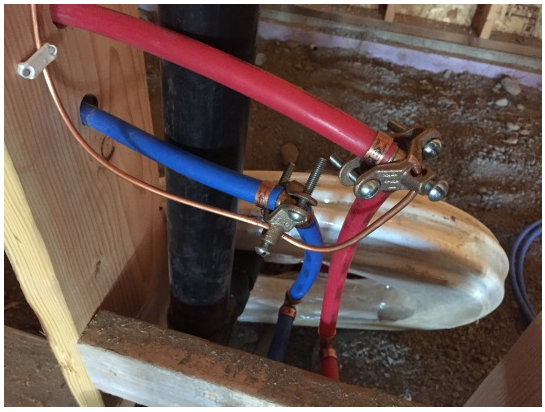
Marijuana Processing and Extraction Facilities

Effective July 1, 2015, the ***State Building Code Council*** (SBCC) adopted an emergency rule, ***WAC 51-54A-3800*** to specify requirements amending the International Fire Code dealing with marijuana processing and extraction facilities. Due to these facilities' use of flammable and combustible liquids for the liquid extraction process, building officials will require these facilities to provide an emergency power system, dedicated hazardous exhaust system and a continuous gas detection system. In addition, specified electrical equipment must be interlocked with the gas detection system and disabled when the gas detection system is activated. The department of L&I cannot require these systems to be installed, but similar to a fire alarm system, when the building official requires it, L&I will inspect to make sure it meets NEC® and RCW 19.28 requirements. These rules, along with other rulemaking proposals are open for public comment on the ***SBCC rulemaking page*** of their website. Comments must be received by close of business on October 23, 2015. Summary of the requirements of WAC 51-54A-3800:

- 3802.4.3 Ventilation. Each marijuana extraction room shall be provided with a dedicated hazardous exhaust system.
- 3802.4.6 Interlocks. All electrical components within the extraction room shall be interlocked with the hazardous exhaust system and when provided, the gas detection system.
- 3802.4.7 Emergency power for extraction process. An automatic emergency power source (meeting the requirements of NEC Article 700) shall be provided with sufficient capacity to allow safe shutdown of the process plus an additional 2 hours. The emergency power system shall supply the extraction room lighting, ventilation system, gas detection system, emergency alarm system, and automatic fire extinguishing systems.
- 3802.6.2 The process using a flammable or combustible liquid shall be located within a hazardous exhaust fume hood, rated for exhausting flammable vapors.

WAC 296-46B-500 states: *Classification of locations may only be done by the authority having jurisdiction or a professional engineer registered in Washington who uses appropriate National Fire Protection Standards as a basis for classification. The authority having jurisdiction is allowed to make the final determination in cases of conflict.* In this case, the authority having jurisdiction is the local building official.

Ugly Picture: An inspector discovered this installation, made by a property owner while inspecting a commercial repair garage. It is not actually a code violation to bond nonmetallic water tubing. There were other NEC® violations discovered, but this was the most interesting thing the inspector found. *Click on the picture to open a larger image.*



Answer to Question of the Month: Type 6P – NEC® 110.28 and Table 110.28 must be used for selecting enclosures for use in specific locations other than hazardous (classified) locations. For more information, refer to this helpful ***enclosure types*** publication from the National Electrical Manufacturers Association (NEMA).